

AMENDMENT

In the Claims:

A. Kindly cancel Claim 4, without prejudice.

B. Kindly amend Claims 1, 2, 5, 12, and 14, as follows.

1. (Twice Amended) A method of fabricating a semiconductor device, having a nitride/high-k material/nitride gate dielectric stack, comprising:

initiating formation of the nitride/high-k material/nitride gate dielectric stack by:

depositing a first ultra-thin nitride film on a semiconductor substrate, wherein the first ultra-thin nitride film is deposited by using an atomic layer deposition (ALD) technique;

depositing a high-k material on the first ultra-thin nitride film,

wherein the high-k material comprises a thin metal film, and

wherein the thin metal film comprises at least one material selected from a group consisting essentially of zirconium (Zr), hafnium (Hf), and titanium (Ti); and

depositing a second ultra-thin nitride film on the high-k material, thereby forming a sandwich structure, wherein the second ultra-thin nitride film is deposited using an atomic layer deposition (ALD) technique;

completing formation of the nitride/high-k material/nitride gate dielectric stack from the sandwich structure; and

completing fabrication of the device.

2. (Amended) A method as recited in claim 1, wherein the substrate comprises a material selected from a group consisting of a silicon wafer and a silicon-on-insulator (SOI) wafer.

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5. (Amended) A method as recited in claim 1, wherein the thin metal film further comprises tantalum (Ta).

12. (Twice Amended) A method of fabricating a semiconductor device, having a nitride/high-k material/nitride gate dielectric stack, comprising:
initiating formation of the nitride/high-k material/nitride gate dielectric stack by:
depositing a first ultra-thin nitride film on a semiconductor substrate,
5 wherein the first ultra-thin nitride film is deposited by using an atomic layer deposition (ALD) technique, and
wherein the substrate comprises a material selected from a group consisting of a silicon wafer and a silicon-on-insulator (SOI) wafer;
10 depositing a high-k material on the first ultra-thin nitride film,
a3 wherein the high-k material comprises a thin metal film, and
wherein the thin metal film comprises at least one material selected from a group consisting essentially of zirconium (Zr), hafnium (Hf), and titanium (Ti); and
15 depositing a second ultra-thin nitride film on the high-k material, thereby forming a sandwich structure, wherein the second ultra-thin nitride film is deposited by using an atomic layer deposition (ALD) technique;
completing formation of the nitride/high-k material/nitride gate dielectric stack from the sandwich structure; and
completing fabrication of the device.

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14. (Amended) A method as recited in claim 13,
wherein the thin metal film further comprises tantalum (Ta), and
wherein the thin metal film further comprises a metal oxide.